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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,718	01/07/2005	Tsutomu Katayama	SPL-04-1349	2578

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EXAMINER	
CHIMIAK, EMILY ANN	
ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,718	KATAYAMA ET AL.	
	Examiner	Art Unit	
	EMILY CHIMIAK	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/10/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,12 and 14-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,12 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1,2,6-9,12,14,15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over. Beal et al in view of Savitski et al..

As to claim **1**, Beal et al. discloses pipes comprising ethylene-based copolymers (resin) and polyamide (additive) that are adhered in one embodiment (col. 3 lines 3-15 and col. 6 lines 1-40). The reference discloses that attachment can be made by adhesively bonded sleeves, butt fusion or electrofusion-weldable sleeves. However, the reference does not disclose laser butt welding as a means of attaching the pipes. In fact, butt welding is known to be difficult, especially with small pipes (col. 6 lines 7-13).

Savitski discloses that when attaching pipes in order to overcome mechanical limitations or for other considerations, neither adhesively bonded sleeves, butt fusion or electrofusion-weldable sleeves are sufficient to produce a good connection between plastic pipes (col. 1 lines 57-67 and col. 2 lines 10-11, 15-20 and 35-45). As an alternative, Savitski et al discloses a method of joining pipe-shaped articles comprising:

- butting pipe-shaped pieces 20 and 30 through a fitting comprising a resin member 42 in one embodiment, while disposing a laser light absorber between the end parts of the pipe-shaped articles
- at least one end part of the pipe-shaped articles or the flange or fitting comprising a resin member with a transparency to laser light
- at least one end part of the pipe-shaped articles or the flange, fitting or laser light absorber comprising a resin member with an absorbency for laser light, and
- irradiating laser light on a portion contacted by the end part of the pipe-shaped articles, thereby laser welding them *(col. 3 lines 30-67 and col. 4 lines 1-20 and col. 7 lines 19-20 and 35-55).*

One reading Savitski et al. would appreciate that the reference is not concerned with the particular plastic of the pipes (col. 12 lines 27-35) as long as the degree of transparency allows laser welding.

It would have been obvious at the time of invention to one of ordinary skill in the art to join the pipes disclosed by Beal et al. using the method disclosed by Savitski et al. in order to produce a good weld.

As to claim **2**, the rejection of claim 1 above is relied on.

As to claim **6,** Beal et al. as modified by Savitski et al. discloses that the thickness of the outer
layer is 10 to 250 micrometers *(Savitski et al., col. 8 lines 32-35).*

As to claim **7,** Beal et al. as modified by Savitski et al. discloses that the laser light absorber is a

pigment (colorant) in one embodiment *(Savitski et al., col. 8 lines 6-8).*

As to claim **8,** Beal et al. as modified by Savitski et al. discloses that the light absorber is a film comprising a resin member containing a colorant, wherein the film is 10-250 micrometers thick *(Savitski et al., col. 8 lines 32-33).*

As to claim **9**, Beal et al. as modified by Savitski et al. discloses that the thickness of the light absorber film is 10-250 micro meters thick *(col. 8 lines 32-34).*

As to claim **12**, in one embodiment Beal et al. discloses that the pipe comprises copolymers of ethylene and at least one methacrylate (methacrylic acid), which has a transmittance of 40 to 90% for laser light (*see Beal et al. col. 3 lines 40-46 ad applicant's specifications page 25 lines 23-29).*

As to claim **14**, the *additive* having absorbency for laser light is incorporated in the pipes of Beal et al. in an amount within a range of not allowing melting of the resin even when laser light is absorbed. It is another absorber, (44) in Savitski et al., that absorbs sufficient laser light for welding in the method of Beal et al. as modified by Savitski et al.

As to claim **15**, Beal et al. discloses a the resin member constituting the pipe shaped article and fitting comprising mainly comprises polyamide *(col. 3 lines 39-41 and col. 6 line 4 and 24-25).*

As to claim **16**, the pipe-shaped article is for fuel gas-supplying *(col. 1 lines 12).*

4. ***Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beal et al. and Savitski et al. as applied to claim 1 above, and further in view of Sixsmith (US 4958857).***

Beal et al. as modified by Savitski et al. discloses (C) that the end parts of pipe-shaped articles comprising a resin member having transparency to laser light are butted together through

an internal coupling (fitting) comprising a resin member having absorbance for laser light while applying a lateral pressure, and laser light is irradiated from the end part sides of the pipe-shaped articles, thereby laser-welding the end parts (col. 10 lines 23-24 and col. 11 lines 41-67). Savitski et al. does not disclose that the fitting is in the form of a flange. However, Sixsmith teaches using a flange 27 for use in squeezing the pipes together during a butt welding process (col. 3 lines 51-55). It would have been obvious to one of ordinary skill at the time of invention to use a flange as taught by Sixsmith for use when squeezing the pipes together in the welding disclosed by Savitski et al.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beal et al. and Savitski et al. as applied to claim 1 above, and further in view of Kistenich et al. (US 482305).

Beal et al. as modified by Savitski et al. discloses one resin member having transparency to light and the other resin member having absorbency for laser light, abutting the members together and irradiating laser light from the first pipe shaped article side (col. 7 lines 35-50 and col. 8 lines 12-15) but does not disclose (G) the inner surface of the end part having a tapered joining face and the outer surface of the end part having a tapered joining face matching the tapered joining face of the end part of said first pipe-shaped article. However, Kistenich et al. teaches joining tapered end 5a of pipe 5 to tapered end 6a of pipe 6 in order to produce a dense and economical joint (col. 2 lines 18-19 and 23-26 and col. 3 lines 48-53). It would have been obvious at the time of invention to one of ordinary skill in the art to create a tapered joint as taught by Kistenich et al. instead of providing a separate sleeve as taught by Savitski et al. in order to provide a clearance-free interference fit.

Response to Arguments

6. Applicant's arguments filed 12/10/2008 have been fully considered but are not persuasive.

As to the argument regarding the welding methods of the different references, one would be motivated to look to Savitski because this reference overcomes the disadvantages of the pipe-joining methods disclosed by Beal et al. See the rejection of claim 1 presented above.

As to the argument regarding a resin member having weak absorbency for laser light, Savitski teaches this. The radiation transmitting material is not perfectly transmissive, i.e. some of the laser light is absorbed. Please see Savitski et al. col. 7 lines 50-53).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMILY CHIMIAK whose telephone number is (571)272-6486. The examiner can normally be reached on Monday-Friday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-6486. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Emily Chimiak
/Emily Chimiak/

/Justin R Fischer/
Primary Examiner, Art Unit 1791